ENERGY POLICY UPDATE

November 17, 2014

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UPCOMING WEBINARS

November 18: High Performance Space Conditioning Systems, Part II Webinar
Sponsor: Building Technologies Office - Click here to register.

November 18: Davis-Bacon Act Compliance Webinar
Sponsor: Weatherization & Inter-governmental Programs Office
Click here to register.

November 19: Better Buildings Residential Program Solution Center Webinar
Sponsor: Better Buildings Residential Program
Click here to register.

- ENERGY STAR Webinars
- U.S. Dept. of Energy Tribal Renewable Energy Webinar Series for 2014

UPCOMING EVENTS

2014

Renewable Energy Markets Conference
Dec. 2-4 Sacramento, CA

White House Tribal Nations Conference
Dec. 3 Washington, DC

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

Arizona's Approach to Energy Efficiency Programs Is Conservative
[Arizona Republic, Nov. 14] Arizona already has one of the most conservative cost/benefit calculations in the nation for energy efficiency programs used by utilities, making it harder for the programs to win approval than in other states. The Arizona Corporation Commission has proposed repealing the state requirement that utilities conserve 22 percent of their projected electricity sales by 2020. The standard drives most efficiency projects at regulated utilities. Today it works like this. Utilities such as Arizona Public Service and Tucson Electric Power submit plans to comply with the state standard. In the annual plans, they suggest particular measures, such as giving away shade trees or offering rebates on pool pumps or air conditioners. The commission staff reviews the proposals and determines whether the energy savings expected from each measure are greater than the costs. The commission's test looks strictly at the avoided electricity costs versus the price of the measure, with no credit for environmental or health benefits, including carbon pollution, which the Environmental Protection Agency is moving to limit from power plants. The ACC staff also doesn't provide any credit for the reduction in water used at power plants when energy is conserved. Commission spokeswoman Rebecca Wilder said those issues "are taken into consideration," but not used in the actual calculation to determine whether a measure is cost effective. The calculations are important because they determine what programs are included in a utility's efficiency program, from air conditioner and pool pump rebates to home energy audits. "Over the years, there have been a number of disagreements over the staff test," said Jeff Schlegel, the Arizona representative for the Southwest Energy Efficiency Project. "It is about the most conservative that I've seen," he said of the Arizona test. "It is a high bar. If the staff finds something to be cost effective, it probably would be found even more cost effective in other states." Most state's use a "societal cost test," or SCT. Those tests count not only the money customers save with the efficiency programs, but broader benefits such as reduced air pollution from reducing electricity demand, and reduced water use in power plants.

APS Opens New Solar Plant Near Gila Bend
[Arizona Republic, Nov. 15] Arizona Public Service Co. recently opened a solar power plant near Gila Bend that brings the state's largest utility closer to its renewable-energy goals. The Gila Bend Solar Power Plant is the newest in APS' AZ Sun program, which now includes seven solar-energy plants around the state. Two more solar plants are in the permitting and planning stages. "It's a good, solid producer of generation for APS. It's a really critical part of our portfolio," APS

Solar Development on Landfills and Brownfields
Dec. 8-9 Chicago, IL

ITEP Course: Greening Tribal Operations and Facilities
Dec. 9-11 San Diego, CA

2015

NAHB Int'l. Builders' Show
Jan. 20-22 Las Vegas, NV

ASHRAE Winter Conference
Jan. 24-28 Chicago, IL

Getting to ZERO Nat'l. Forum
Feb. 1-3 Washington, DC

NASEO Energy Policy Outlook Conference 2015
Feb. 3-6 Washington, DC

Solar Power Generation USA
Feb. 4-5 San Diego, CA

Energy, Utility & Environment Conference (EUEC) 2015
Feb. 16-18 San Diego, CA

Sustainability Solutions Festival
Feb. 16-21

GreenBiz 2015
Feb. 17-19 Phoenix, AZ

GreenBiz Forum 2015
Feb. 17-19 Phoenix, AZ

2015 Sustainability Solution Festival
Feb. 17-22 Phoenix, AZ

Natural Gas Vehicles + Infrastructure
Mar. 10-11 Phoenix, AZ

Solar Summit 2015
Apr. 14-15 Phoenix, AZ

CxENERGY 2015 Conference & Expo
Apr. 27-30 Las Vegas, NV

Alternative Clean Transportation (ACT) Expo
May 4-7 Dallas, TX

Solar Power Generation Mexico
May 19-20
World Trade Center, Mexico

solar generation manager Jim Piotrowski said. "The solar is very good for APS and our customers." Arizona, the sunniest state in the country, has a Renewable Energy Standard that requires 15 percent of electricity consumption by 2025 to come from renewables, including 4.5 percent this year. The Gila Bend plant became fully operational on Oct. 31 after seven months of construction and another two months of testing. It cost roughly $100 million and has an expected lifespan of 30 years.

Arizona Energy-Saving Programs in Jeopardy

[Arizona Republic, Nov. 5] The Arizona Corporation Commission has proposed eliminating the requirements for utilities to meet a portion of their energy demand through efficiency programs that reduce consumption. Those programs, which also conserve water and reduce pollution, are projected to save consumers $9billion on their utility bills through 2020. The staff at the commission on Tuesday filed its proposal, which must be weighed by the five elected commissioners. The regulators set rates and policies for utilities.

Downtown Mesa Electric Customers Can Seek $15,000 Solar Incentive

[Phoenix Business Journal, Nov. 5] Mesa electric customers – essentially the central and downtown areas – are eligible to dip into a $150,000 incentive program to install solar photovoltaic panels on homes and businesses. The program, for property owners, pays 20 cents per kilowatt hour for power generated by the panels. Residential customers can receive up to $1,000 and business property owners are eligible for up to $15,000. The incentive allows the city to capture the excess power generated by the systems. Incentives are paid on a per kilowatt hour basis for the surplus electricity moving into the city's power grid.

Drought A 'Slow-Motion Disaster' for Western States

According to hydrologists, our long-term drought situation is still in a bit of hurt despite the record rains this year because snowmelt is the main replenishment for Arizona's water supply. People were hesitant to use the term early on. But the "D-word," which is affecting much of the western U.S., was clearly the focus of a forum Tuesday for government, policy and industry representatives. Drought. States must plan for this "slow-motion disaster," Executive Director James Ogsbury said at the Western Governors' Association Drought Forum in Tempe. The forum is the second of four workshops being held this year by the organization, a bipartisan group representing 19 states. The first drought forum, held last month in Oklahoma, featured drought's impact on the energy sector. Tuesday's workshop focused on effects on mining, manufacturing and industry. Presenters gave insight into how Arizona deals with this uncertainty to attendees from water authorities and other agencies of several states. Overall, water managers here are doing their jobs to reduce usage, conserve for the future and find ways to fill the gap between what the state has and what it will need, said keynote speaker Sandra Fabritz-Whitney.

Energy Efficiency Programs That Could Be Cut Have Helped Thousands of Consumers

Far more utility customers participate in energy-efficiency programs than put solar on their roofs.
[Arizona Republic, Nov. 14] Solar power might be the popular kid on the block in Arizona, but far more utility customers participate in energy-efficiency programs than put solar on their roofs, and far more will be affected if those programs are cut, as regulators propose. Arizona Public Service Co., for example, has about 29,000 customers with rooftop solar, among the most of any U.S. utility. But that pales in comparison with the hundreds of thousands of customers who have energy-efficient appliances, well-built homes and use low-watt lightbulbs, all funded in part by the company's efficiency program. "We estimate that about 40 percent of our 1.1 million customers have participated in our programs," said Jim Wontor, energy-efficiency manager for APS. On Nov. 4, the staff at the Arizona Corporation Commission suggested eliminating the requirement that utilities such as Arizona Public Service Co. reduce the electricity they sell by 22 percent by 2020. They also proposed cutting a similar efficiency rule for gas utilities. The Corporation Commission staff drafted the proposal to kill the rule because some regulators are concerned the programs are not cost-effective. While the proposal would allow utilities to have efficiency programs, environmental and ratepayer advocates fear utilities will not use efficiency as aggressively without a state mandate forcing their hand.

First Solar Profit Slumps as Utility Project Sizes Shrink

[Bloomberg, Nov. 6] First Solar Inc. (FSLR**)** profit slipped in the third quarter as the largest U.S. photovoltaic panel manufacturer seeks to land new orders for power plants to replace the giant desert projects that led to record sales last year. Net income fell to $88.4 million, or 87 cents a share, from $195 million, or $1.94, a year earlier, the Tempe, Arizona-based company said today in a statement. Excluding a 26-cent tax benefit, profit was 61 cents, missing the 64-cent average of 16 analysts' estimates compiled by Bloomberg. Sales fell to $889.3 million.

Energy Efficiency Finance Forum
May 31-Jun. 2 San Francisco, CA

Green Building Lecture Series
Granite Reef Senior Center
Scottsdale, AZ

ASHRAE Annual Conference
Jun. 27-Jul.1 Atlanta, GA

RES Las Vegas
Mar. 9-12 Las Vegas, NV

ACEEE Summer Study on Energy Efficiency in Industry
Aug. 4-6 Buffalo, NY

ACEEE National Conference on Energy Efficiency as a Resource
Sep. 20-22 Little Rock, AR

World Energy Engineering Congress (WEEC)
Sep. 30 – Oct. 2 2015
Orlando, FL

ASU Sustainability Series Events

Green Building Lecture Series
Scottsdale, AZ

UPCOMING INTERNATIONAL BUSINESS EVENTS

Arizona Border Economic Summit
Dec. 2 Phoenix, AZ

How Mesa Would Spend $580 Million in Utility Bonds

[Arizona Republic, Nov. 4] For more than a decade, Mesa voters have OK'd every bond question put before them. Next month, city officials will find out whether that generosity will hold when confronted by the biggest bond request in Mesa history. The $580 million utility-bond package would provide for improvements and additions to Mesa's electric, gas, water and wastewater infrastructure — particularly in southeast Mesa, where new subdivisions and industrial facilities have taken root. Its price tag dwarfs those of Mesa's last two utility-bond elections combined, and some residents already have balked at the hefty request. Fourteen people, including former Mesa mayoral candidate Danny Ray, have banded together to write and fund an argument against approving the bond package in the city's general election publicity pamphlet, an explainer for Mesa voters

NFL, Arizona Volunteers Plant Trees Before Super Bowl

[Arizona Republic, Nov. 13] The Valley is about to get a little greener. The National Football League and community volunteers will resume planting trees this Saturday as part of the NFL's program to lighten the Super Bowl's footprint on the environment. The league has helped plant thousands of trees in Super Bowl host states in previous years, and it planted this year's first round last spring at Kenilworth Elementary School in Phoenix. Volunteers took a hiatus during the summer months to wait for the better planting season. The program resumes at Tempe's Goodwin Park with 27 trees, including Chinese Elm, Red Push Pistache and Eldarica Pine. It's one of five major tree-planting projects by the NFL in the Valley before Super Bowl XLIX comes to Glendale in February.

Parched Cities Share Water in West

Longstanding Rivals Phoenix and Tucson, Hit by Drought, Stop Going It Alone

[Wall Street Journal, Oct. 30] PHOENIX—A recent agreement by this city and Tucson, Ariz., highlights a growing trend in the drought-plagued Southwest: water agencies sharing resources to stretch limited supplies rather than going it alone. Phoenix, which gets more water than it can store from the Colorado River, has agreed to send some of its surplus to Tucson, which needs it to lower pumping costs. In return, Tucson will give up part of its share of Colorado River water to Phoenix when needed. The deal finalized in early October comes despite long-standing rivalries between Arizona's two largest cities. "Any rivalry between Phoenix and Tucson is so 10 years ago," Phoenix Mayor Greg Stanton said in an interview. Water transfers between agencies have been picking up across the West in the wake of a drought that has ravaged the region for much of the past 15 years. During Texas' severe drought in 2011, more than 1.7 million acre feet of water were transferred between users, compared with an average of 150,000 annually between 2007 and 2009, according to a 2012 report by the Western Governors Association and Western States Water Council. An acre foot is 326,000 gallons, or about the amount of water used by a family of four in a year.

Panel: Southern Arizona Vulnerable to Climate Change

[Arizona Daily Star, Nov. 13] Southern Arizona is particularly vulnerable to climate change, as temperatures rise, resources become scarce and those living in poverty are disproportionately affected, experts said Thursday during a forum at the University of Arizona. "Our regional temperatures have already increased and they're projected to increase quite significantly over the course of this century," said Gregg Garfin with the university's Institute of the Environment. "Tucson's temperatures in 50 years will be more like Yuma's temperatures." If the amount of heat-trapping gases emitted globally continues at the current pace, panelists said, climate change would bring a cascade of negative effects throughout the world. At the local level, tourism and agriculture will falter, energy costs will skyrocket as people struggle to keep cool, depleted soil moisture will lead to more forest fires and the health of more vulnerable populations, such as the elderly, will be threatened. "We also know that climate change is water change and with increased temperatures, future droughts will be more frequent, more severe and longer, and that will lead to a less reliable water supply," Garfin said. Kathy Jacobs, director of the Center for Climate Adaptation Science and Solutions, said the evidence for human-induced climate change was clear and that everyone should understand the difference between trends and variability. "What the people in the Southeastern United States are experiencing is not identical to what is being experienced everywhere else," Jacobs said. "But there are trends in the same direction everywhere across the United States, including the warmest decade on record in every region." Jacobs was also director for the third edition of the National Climate Assessment, which brought together more than 300 experts to produce a comprehensive look at climate change and its impact on the United States. The report links the rise in sea level, the melting of glaciers and extreme weather events — including prolonged periods of heat, heavy downpours, floods and

droughts — to climate change. It also warns of the increased danger faced by at-risk populations.

SRP Recognizes Champions of Energy Efficiency in Inaugural Program
[Phoenix Business Journal, Nov. 6] Salt River Project honored seven businesses and organizations for their efficient use of energy. In a new program created this year, SRP is encouraging commercial customers to reduce energy use and save money. Called Champions of Energy Efficiency, the awards program encourages business customers to participate in the utility's business solutions programs. These programs are designed to help business customers decrease their energy use, resulting in reduced emissions and costs while deferring the need for future energy generation. Last year SRP's commercial customers saved 195 million kilowatt-hours, which is the same as powering more than 10,000 homes each year. Seven winners were honored at a luncheon on Nov. 5, selected out of 14 finalists.

Water Customers Asked To Go Beyond Saving at the Tap
[Arizona Republic, Nov. 10] New initiatives to protect the West's water supply are asking users to go a step beyond conserving what comes out of the tap and to start saving at the source. The Northern Arizona Forest Fund, launching this year through a partnership between Salt River Project and the National Forest Foundation, aims to fund watershed-restoration projects through the donations of customers and other stakeholders. The fund adds to an increasing number of consumer-based projects emphasizing that distant rivers and forests are the sources of water in the city. The partnership will target Valley businesses and SRP customers to donate to two projects this year. Individuals can voluntarily contribute online, said Rebecca Davidson, SRP senior water-rights analyst. Both projects will benefit the Verde River watershed in the Coconino National Forest. Metro Phoenix's water supply comes largely from canals diverting it for miles from rivers. Even farther away are the mountain watersheds, where snow and rain start the process. Water providers have long promoted tips for conservation, such as trading lush lawns for desert landscaping or using water-efficient faucets and shower heads. But they haven't always helped consumers make the connection between the resource they use and where it comes from, said Kimery Wiltshire, executive director of the water-focused non-profit Carpe Diem West.

ALTERNATIVE ENERGY & EFFICIENCY

China's Hunger to Get Clean Energy Leaving No Rooftop Behind
[Renewable Energy World, Nov. 13] BEIJING – China, the world's biggest solar market for two years running, is pushing to install more panels at factories, schools and even greenhouses as it seeks to meet its goals under a historic climate agreement with the U.S. China expects to install as much as 8 gigawatts of small solar systems this year, more than 10 times what was built last year. The country had almost 20 gigawatts of solar capacity at the end of 2013, a figure comparable to about 20 nuclear reactors. Most of that came from massive solar farms in remote locations and policy makers are now promoting smaller systems closer to where they're needed. The push to promote wider use of rooftop solar comes amid growing health concerns tied to smog within its own population and from foreign companies. It also adds to the nation's push to be a leader within the global climate community. The figures show the changes. Coal made up 64 percent of China's electricity mix in 2013, down from 68 percent in 2010, according to Bloomberg data. Solar's proportion of electricity generation capacity rose to 2 percent, from 0.08 percent four years ago, doubling nuclear power's share last year. "Solar is actually the most attractive when you do rooftop because it eliminates transmission and distribution investment," said Ahmad Chatila, chief executive officer of St. Peters, Missouri-based SunEdison Inc.

Co-Ops Growing Solar in 34 States
[Fierce Energy, Nov. 11] Solar development by electric cooperatives has great potential for expansion and is growing rapidly. Member-owned, not-for-profit co-ops currently have online or are planning to develop 240 MW of owned and purchased solar capacity in 34 states. Co-ops are making significant investments in renewable resource generation, using loans from the Rural Utilities Service and other sources. With solar becoming more cost-competitive, electric co-ops are poised to invest hundreds of millions of dollars in new projects. With such a large and rapidly expanding footprint, the National Rural Electric Cooperative Association (NRECA) has made such projects easier to track with an interactive website, which tracks solar development by electric cooperatives through maps, data, photos and video, demonstrating the recent dramatic increase in cooperative-owned and purchased solar capacity. The website complements electric co-op research, funded by the Department of Energy's SunShot initiative, to develop tools and business strategies to accelerate the deployment of utility-scale solar.

NGVAmerica Launches Natural Gas Station Mapping Tool
[Environmental Leader, Nov. 13] NGVAmerica has launched the NGVAmerica Station Analysis Map, a tool that maps US natural gas stations and highlights the vehicle ranges supported by the stations in 100-, 400- and 600-mile increments. In addition to vehicle range, the NGVAmerica Station Analysis Map features comprehensive and up-to-date information on the nation's compressed natural gas and liquefied natural gas fueling infrastructure, including station locations, accessibility and contact information. This information is derived from the Alternative Fuels Data Center and is updated monthly.

Today's Power Plants Favor Sips of Water Over Gulps, Report Says
[Greenbiz.com website, Nov. 13] The coal-fired John Amos Power Plant reflected on the Kanoa River in West Virginia. A new U.S. Geological Survey report found that nationwide power plant water use declined by 20 percent between 2005 and 2010. Among all the things that we use less of today than in 1970 — paper maps, postage stamps and cameras without a phone are some items that immediately come to mind — water is the next thing that should be added to that list, according to the newest report released by the U.S. Geological Survey. The report finds that as of 2010, U.S. water use is at its lowest since almost 40-plus years ago. The latest data reveal that in 2010, the U.S. used about 13% less water than in 2005 for all purposes. Water for power plants still remained the highest use of any industry, a staggering 161 billion gallons per day. While still enormous, power plant water use declined by 20 percent between 2005 and 2010, to a level not seen since before 1970. This reduction of 40 billion gallons per day is comparable to the amount of water used in the entire state of California. The results of this latest USGS report are both surprising and encouraging because we are witnessing a trend in declining water use despite the country's continuing economic expansion and population growth. Achieving this record low in 40-plus years is confirmation that new water-efficient technologies and improved water resource management approaches are producing real water savings on the ground. Power plants, for example, dramatically can reduce water needed for cooling purposes by installing closed-cycle systems. Also, the technologies for managing the ash generated at coal-fired plants can operate with dry handling methods (PDF) that use little or no water at all.

ENERGY/GENERAL

Clean Energy Financing for Resilient Power Projects
[Fierce Smart Grid, Nov. 5] Although two years later, the experience of Superstorm Sandy is still fresh in many people's minds and many are still wondering how this can be avoided in the future. One way is through the installation of resilient power projects, such as solar PV with energy storage, to ensure against the devastating consequences of power outages from similar disasters. With resilient power applications, communities can shelter in place and are better able to withstand the potential harm from loss of electricity. A new report from Clean Energy Group provides an overview of several clean energy finance strategies for low-cost, long-term financing of resilient, clean-energy technologies, such as bond financing, credit enhancement, and public and private ownership structures. In the two years since Superstorm Sandy, policy makers have begun to pursue "resilient power" strategies, advocating for the deployment of smart, clean energy technologies to keep the power on when the rest of the grid goes down. Instead of diesel generators like those which failed during Sandy, new policies have been put in place to support more resilient power technologies such as Connecticut's $40 million microgrid program, the $40 million Massachusetts resilient power program, and New Jersey's $200 million Energy Resilience Bank. Beyond the East Coast, California has begun a demonstration program for the use of microgrids to build resilient, low-carbon facilities and communities, with an emphasis on connecting resilient power to critical facilities.

Gas To Average Under $3 in 2015, Government Says
[Associated Press, Nov. 12] NEW YORK — The average price of gasoline will be below $3 a gallon in 2015, the government predicted Wednesday. If the sharply lower estimate holds true, U.S. consumers will save $61 billion on gas compared with this year. In a monthly report, the Energy Department reduced its forecast for global oil prices next year by $18 a barrel to $83. Weakness in the global economy will crimp demand for oil, while production in places like the U.S. keeps rising. The result: Drivers will pay $2.94 per gallon on average in 2015, 45 cents lower than this year. Based on expected gasoline consumption, that's a savings of $60.9 billion. That may not seem like a lot in the context of a $17.5 trillion U.S. economy, but economists say it matters because it immediately gives consumers more money to spend on other things. Consumer spending accounts for 70 percent of the U.S. economy.

Pemex Looks To Develop Natural Gas Export Terminal

Plant Would be First of Its Kind in Mexico

[Wall Street Journal, Nov. 5] Mexico's state-owned energy company, Petroleos Mexicanos, or Pemex, said it wants to develop a liquefied natural gas export terminal on the Pacific coast of Oaxaca and is seeking private funds to help pay for it. The country, already a major exporter of crude oil, is trying to expand its energy sector under recently adopted laws that allow for new drilling and greater foreign investment. Mexican energy officials want to start exporting natural gas to Asia. Mexico, already a major exporter of crude oil, is trying to expand its energy sector under recently adopted laws that allow for new drilling and greater foreign investment. The $6 billion gas export plant would be the first of its kind in Mexico--a country whose own gas supply is so strained that it buys natural gas from the U.S. and moves it across the border on pipelines. But Pemex officials speaking in Houston on Wednesday said the proposed export terminal near Salina Cruz, 450 miles southeast of Mexico City, could access existing gas fields in the southern part of the Gulf of Mexico. The plant is being designed to ship five million tons of liquefied gas out each year to markets in Asia and other points in Latin America, the company said. Construction could start in 2017, with the first shipment expected in 2021.

U.S. Shale Boom Masks Threats to World Oil Supply, IEA Says

[Bloomberg, Nov. 14]The U.S. shale boom masks threats to global oil supply including Middle East turmoil, conflict in Ukraine and the difficulty of unconventional oil production beyond North America, the International Energy Agency said. "The global energy system is in danger of falling short of the hopes and expectations placed upon it," the IEA said today in its annual World Energy Outlook. "The short-term picture of a well-supplied oil market should not disguise the challenges that lie ahead as reliance grows on a relatively small number of producers." Global oil consumption will rise to 104 million barrels a day in 2040 from 90 million barrels a day in 2013, driven by demand for transport fuel and petrochemicals in developing countries, the report said. To meet that growth and replace exhausted fields will require about $900 billion a year in investment by the 2030s as oil companies develop fields from Canada's oil sands to the deep waters off Brazil, the IEA said. Benchmark oil prices in New York have dropped more than 20 percent this year as crude production in the U.S. reached the highest in 40 years, driven by shale fields in North Dakota and Texas. That's threatening investment in the global industry as companies try to insulate profits from the price fall. While the near-term picture is secure, the development of capital-intensive areas outside North America is at risk, the IEA said. Oil futures fell as much as 1.1 percent to $77.10 a barrel in New York today.

INDUSTRIES AND TECHNOLOGIES

A Battery To Prop Up Renewable Power Hits the Market

A startup has started selling a battery that helps solar and wind power operate in remote locations.

[MIT Tech Review, Nov. 14] A new kind of battery that stores energy from solar and wind power cheaply and cleanly has hit the market. It is by far the cheapest of a new generation of large, long-lived batteries that could make it possible to rely heavily on intermittent, renewable energy sources. Aquion Energy, a company spun out of Carnegie Mellon University, recently delivered the first of its batteries to operators of small power grids, or "microgrids," that can operate independently of the centralized grid. Microgrids, which typically use local energy sources such as wind, solar, and hydropower, could help hundreds of millions of people who live beyond conventional grids get reliable electricity. Batteries can store power from solar panels or wind turbines to provide round-the-clock power. Alternatively, diesel generators can be used. Aquion's batteries use sodium ions from saltwater as their electrolyte. Electrical current moves through this brackish liquid from positive electrodes based on manganese oxide to negative ones based on carbon. The batteries are large and operate slowly, but they are also manufactured cheaply, using repurposed manufacturing equipment. Last week Aquion announced $34.6 million in funding to help it scale up production. The batteries cost about as much as lead-acid ones, which are sometimes used now, but they last twice as long, effectively cutting the long-term costs in half (see "Demo: Storing the Sun"). Other long-lived batteries exist, but they cost far more than lead-acid batteries. The new energy storage technology could be crucial to making renewable energy more viable, especially in remote locations. By making solar power cheaper than diesel fuel in many places, it could help bring clean power to some of the more than one billion people in the world without reliable electricity (see "A Billion People in the Dark").

Batteries Market To Double in 10 Years, Says Navigant

[Energy Manager Today, Nov. 6] The batteries industry is in the midst of a dramatic transformation, according to Navigant Research. Long ruled by the lead-acid and primary alkaline

chemistries, a new wave of advanced battery chemistries is starting to significantly penetrate the stationary, portable and transportation markets. Advanced battery chemistries include lithium ion (Li-ion), redox flow, sodium metal halide and advanced carbon lead-acid (ACLA). In its report "Materials for Advanced Batteries," Navigant Research predicts the overall advanced batteries industry will grow from a $20.1 billion market in 2014 to a $46.5 billion market in 2023. And, as the industry transforms, the supply chain of materials going into those batteries is also in the process of developing and maturing.

First Underground Coal Gasification License Issued in 20 Years

[Fierce Energy, Nov. 10] After a lengthy approval process, Linc Energy has been approved for a research and development license to conduct an underground coal gasification demonstration project. Issued by the U.S. Environmental Protection Agency (EPA) and the Wyoming Department of Environmental Quality, it is the first such license issued in 20 years for a procedure largely abandoned by the energy industry. Underground coal gasification (UCG) is a process in which wells are drilled to convert coal to gas while it is in a coal seam that has not been mined. Injection wells are drilled to provide air or oxygen to provide fuel for underground combustion. Separate wells are used to bring the gas to the surface. The process has been considered controversial because of environmental concerns, but it has a relatively small footprint, particularly when compared to a mine. The process has a long history in the energy industry, but finding the right process to make it work has been elusive -- and so it has been neglected. Linc Energy, however, is convinced it has the technology to make it work. The Australian company will have its chance with the demonstration project in Wyoming's Powder River Basin. The company has completed several successful tests on a small scale in Australia.

LEGISLATION AND REGULATION

Energy Weighs Impact of Looming Efficiency Regs

[The Hill, Nov. 4] Just two months before energy efficiency standards for residential central air conditioning and heat pump systems are expected to take effect, the Department of Energy (DOE) is deciding whether to rewrite the rules. The DOE last updated the regulations for these household appliances in 2011, amending standards for products manufactured on or after Jan. 1, 2015. Though the department has until June 6, 2017, to issue new standards, DOE's Office of Energy Efficiency and Renewable Energy issued a public notice Tuesday asking for help determining if new rules are needed. The office wants to know if new standards would save significantly more energy, be technologically feasible and economically justified.

Keystone Pipe Vote Tackles Questions History Answered

[Bloomberg, Nov. 17] As the Keystone XL pipeline from Canada races toward a showdown in the U.S. Congress, many in the oil industry say it's already been bypassed by history. Six years after the project was proposed, nearly every aspect of the debate has changed. The economy's on the mend, the price of crude oil has tumbled and the U.S. goal of achieving energy independence has never been closer, spurred by the success of fracking and a rising volume of Canadian crude entering the country in other ways. While Keystone's status as a powerful political symbol remains as strong as ever in the halls of Congress, where the project may get a green light in a second vote this week, the pipeline's become "kind of old news" within the industry, said Sandy Fielden, director of energy analytics at RBN Energy in Austin. "Producers have moved on." The 830,000 barrels per day Keystone would carry have found other paths to the U.S. Cross-border pipelines such as Enbridge Inc.'s Alberta Clipper are considering expansion. By next year, Alberta, home to the Canadian oil sands, will have built about 700,000 barrels a day of rail capacity from almost nothing a few years ago, said Patrick Kenny, an analyst at National Bank Financial in Calgary. "A lot of work has been done to backfill the capacity that Keystone XL was supposed to represent," Kenny said. "Keystone would have been a 'must-have' without all the crude-by-rail that has come on in the last couple of years."

EPA, DOE Release 2015 Fuel Economy Guide for Car Buyers

[Energy.gov, Nov. 6] The U.S. Environmental Protection Agency (EPA) and the Department of Energy (DOE) today released the 2015 Fuel Economy Guide, providing consumers with a valuable resource to help them choose the most fuel-efficient and low greenhouse gas emitting vehicles that meet their needs. In comparison to previous years, the 2015 models include a greater number of fuel efficient and low-emission vehicles in a broader variety of classes and sizes.

Program That Backed Solyndra Turns Profit

[The Hill, Nov. 13] The controversial federal program that funded a loan guarantee to failed solar

company Solyndra has now turned a profit. Interest payments from the Department of Energy's (DOE) Loan Programs Office were $810 million in September, the first time they exceeded the $780 million in losses from bankrupt companies like Solynda, Fisker Automotive and Abound Solar, Reuters reported Thursday. The results, found in a report by the office, are a political victory for the highly controversial program that seeks to help develop alternative energy and energy efficiency technology. After Solyndra's bankruptcy in 2011, it became a symbol of Republicans' charges that the Obama administration wanted to pick winners and losers in the marketplace and chose bad companies to prop up. It served as a political football in the 2012 presidential race. The DOE has defended the program, saying that with a default rate of around 2 percent, its portfolio has performed better than most in the private sector.

US-China Climate Deal Aims To Prod Others To Act

[Associated Press, Nov. 12] BEIJING (AP) — A groundbreaking agreement struck by the United States and China is putting the world's two worst polluters on a faster track to curbing the heat-trapping gases blamed for global warming. With the clock ticking on a worldwide climate treaty, the two countries are seeking to put their troubled history as environmental adversaries behind them in hopes that other nations will be spurred to take equally aggressive action. The U.S., a chief proponent of the prospective treaty, is setting an ambitious new goal to stop pumping as much carbon dioxide into the air. China, whose appetite for cheap energy has grown along with its burgeoning economy, agreed for the first time to a self-imposed deadline for when its emissions will top out. However, it wasn't clear how either the U.S. or China would meet their goals, nor whether China's plan to allow its emissions to grow until peaking in 2030 would negate any reductions in the U.S. The dual announcements from President Barack Obama and Chinese President Xi Jinping, unveiled Wednesday in Beijing, came as a shock to environmentalists who had pined for such action but suspected China's reluctance and Obama's weakened political standing might interfere. In Washington, Republicans were equally taken aback, accusing Obama of dumping an unrealistic obligation on the next president.

WESTERN POWER

Appeal Filed in New Mexico's Green-Building Code Case

[Santa Fe New Mexican, Nov. 6] Energy-efficiency advocates are asking the state's high court to review a New Mexico Court of Appeals decision in September that allowed a rollback of New Mexico's green building code. The Court of Appeals upheld a repeal by the New Mexico Construction Industries Commission of a new energy-efficiency requirement for residential and commercial buildings. The New Mexico Environmental Law Center now is asking the state Supreme Court to review the decision. The law center is representing the nonprofit Environment New Mexico, builder Sundancer Creations Custom Builders and Faren Dancer , Sanders Moore and Tammy Fiebelkorn. The Court of Appeals failed to review the full record in the case, according to Douglas Meiklejohn , the law center's director and lead counsel.

Buffett-California Power Market Dealing with Price Anomalies

[Bloomberg, Nov. 14] The U.S. West power market that PacifiCorp, part of Warren Buffett's Berkshire Hathaway Inc. (BRK/A), and California's grid operator created Nov. 1 is generating "pricing anomalies," a federal filing shows. The market, which allows utilities to trade power across California and PacifiCorp's territories, is at times creating abnormally high prices in PacifiCorp's region because not enough supply is being bid into the system, California Independent System Operator Corp. said in a filing yesterday. It's seeking to waive tariff terms for 90 days to prevent the high prices while the resource pool expands. Both PacifiCorp and the California ISO have hailed the market as the beginning of a regional system that will allow the integration of more renewable power by helping moderate sudden swings in power supply. NV Energy Inc., another one of Buffett's Berkshire utilities, is slated to join next year. The market started a month late after the operators decided they needed more time for testing and simulation. Teams at PacifiCorp and California ISO ran market simulations and weren't able to detect all of the changes necessary to "sustain stable market operations," the ISO said in its petition to the Federal Energy Regulatory Commission. "It was not until actual operations that these circumstances were experienced and the resulting price excursions became apparent."

California Solar Industry Is Heating Up Again

[Sacramento Bee, Nov. 8] The solar power industry, viewed more than a decade ago as a game-changing, jobs-producing juggernaut in California, took its lumps during the recession. But now it's coming back with a vengeance, both here and globally. Some California solar system installers say they have work backlogs. New deals to build new solar power-generating arrays are being announced regularly. And the nation's No. 1 solar installer, San Mateo -based SolarCity

Corp. , recently created ripples industrywide, announcing a loan program that lets homeowners finance and buy their rooftop solar systems. It also announced an offering of what it calls the nation's first solar bonds. "Inch by inch and now leap by leap, solar is growing and creeping further into the mainstream ... and California is a center point for what we're seeing now," said Alfred Abernathy, a Bay Area energy analyst. That growth is fueled partly by a sunnier economy, falling manufacturing costs, federal tax incentives and increasing consumer and corporate enthusiasm for renewable energy. Solar also has boomed far beyond California's borders, spreading in China, Japan and Europe. For perspective, the U.S. Department of Energy shows that the United States currently has about 16 gigawatts of installed solar power, or enough to power more than 3 million average American homes. Through June this year, California accounted for nearly half -- 7 gigawatts -- of the national total. A gigawatt is a unit of power equal to 1 billion watts. By contrast, China's solar power supply is more than 23 gigawatts, and it has set a goal of 35 gigawatts in 2015. Japan surpassed 14 gigawatts early this year and is working toward a goal of doubling that by 2020.

CA Water Utilities Hail Historic $7.5 Million Bond

[Fierce Energy, Nov. 6] California's $7.454 billion Water Quality, Supply and Infrastructure Improvement Act of 2014 (Proposition 1), which passed this week, is expected to increase investment in projects to improve the long-term reliability of the state's water supply but comes too late to mitigate the impact of the current drought, according to Fitch Ratings. Although the legislation won't increase the state's water supply, water utilities couldn't be more excited by its prospects, specifically for investment in infrastructure projects surrounding drinking water protection, groundwater storage, water recycling, advanced water treatment, and water supply management. The California Water Association (CWA), which represents 114 investor-owned water utilities regulated by the California Public Utilities Commission, hailed the bill's passage. "Despite the fact that regulated water utility customers pay equally for general obligation bonds through their taxes, in the past they were penalized because, unlike their government-owned utility counterparts, investor-owned water companies often were not eligible to apply for grants associated with such bonds," said Robert W. Nicholson, president of the CWA. "For the first time in a statewide water bond, on a basis comparable to government-owned water utilities, customers of regulated, investor-owned water companies will be able to realize benefits from bond funding." Specifically, the funds will help offset customer costs for critical infrastructure projects like recycled water, groundwater clean-up, water-use efficiency, and safe drinking water for smaller systems in economically disadvantaged communities -- all of which go beyond traditional supply sources and distribution needs.

CPS Energy Putting San Antonio on the Forefront of Smart Cities

[Fierce Energy, Nov. 10] The largest municipally owned electric and natural gas utility in the United States, CPS Energy, is working with the Advanced Energy Economy Institute, a nonprofit educational affiliate of Advanced Energy Economy (AEE), to make San Antonio a "Smart City" through new technologies and services connected by the city's power grid. A Smart City results from a convergence of advanced energy and advanced digital technology where city services are optimized by instant communication and coordinated response, according to a definition by AEE. "The Smart City movement is about connecting households with information and services that put them in control of their energy use and giving businesses tools to make them more productive," said Graham Richard, CEO of Advanced Energy Economy and the AEE Institute. "Connectivity, control, big data -- these are the elements that will transform the way we live and work in the urban environment. CPS Energy is putting San Antonio out in front." CPS Energy has in development a "grid of the future" plan, which envisions an evolution of the grid from a one-way electric distribution system into a network that enables transactions of all sorts between customers and suppliers.

Commission Rejects $438M Plan To Build Solar Plant in Moapa Valley

[Las Vegas Sun, Oct. 30] CARSON CITY – Senate Majority Leader Harry Reid is unhappy that state regulators rejected a plan by Nevada Power to build a $438 million solar energy plant on the Moapa Valley Paiute Reservation about 50 miles from Las Vegas. The state Public Utilities Commission voted 2-1 Monday that Nevada Power failed to show the need for the plant. But the commission unanimously accepted the electric company's proposal to buy other natural gas companies. Reid issued a statement Wednesday saying the PUC's refusal to approve the plan denies the Moapa Band of Paiutes the opportunity to improve their lives. The project would have created hundreds of jobs in the area and its rejection is "is a setback for all Nevadans," Reid said. Nevada Power had been told by the legislature to submit plans to shut down the coal-burning Reid Gardner plant, accused of causing air pollution in Southern Nevada. Workers will be transferred to other jobs with Nevada Power. The utility submitted a package deal for buying the

natural gas companies to make up for the loss of power but also included the development of the Moapa solar plant. Commissioner Rebecca Wagner authored an opinion to approve Nevada Power's plan in full. But Commission Chairwoman Alaina Burtenshaw and Commissioner David Noble voted to remove the Moapa plant from the deal. Burtenshaw said the utility failed to show that the cost of the Moapa plant was reasonable, would create the greatest opportunity for jobs and provide the best possible value for customers.

Energy Storage Enjoys a Breakthrough Day

[Gigaom.com, Nov. 6] While most Americans were paying attention to election results, news emerged out of California on Wednesday that truly heralds a new era for the energy storage industry. Utility Southern California Edison announced that it will acquire 2200 megawatts (MW) of new power generation assets, of which 250 MW will be energy storage systems. This is the end result of the "Lowest Cost Resource" request for proposals that is designed to eventually replace the generation provided by the shuttered San Onofre nuclear power plant. While the sheer scale of the announcement is staggering (no utility has ever purchased 250 MW of non-pumped-hydro energy storage before), the details of the announcement are even more impactful. Although SCE was expected to use some of this bid for energy storage (it listed energy storage as a "preferred resource" on the RFP), Navigant Research assumed the energy storage part of the purchase would be about 50 MW. By ordering five times that amount of energy storage, SCE is making a very loud statement about how highly it values energy storage as a grid management tool.

New Electricity Rates Could Help Businesses Go Solar

[The Desert Sun, Nov. 16] A new electricity rate structure soon to be offered by Southern California Edison could make it easier for businesses and nonprofits to go solar. Known as "Option R," the new rate structure — which could be available to commercial electricity consumers as soon as January — lowers demand charges that are difficult to reduce with solar panels but which can account for half of a business' monthly power bill. At the same time, Option R increases electricity rates — the portion of the bill that can be substantially reduced by adopting rooftop solar. The result is a rate structure that shortens payback periods for solar-generating systems. Brad Heavner, policy director for the California Solar Energy Industries Association, said Option R "greatly expands the market" for rooftop solar at businesses and nonprofits.

ARIZONA STATE INCENTIVES/POLICIES

ARIZONA COMMERCE AUTHORITY (ACA)

INCENTIVES

Arizona has lowered taxes, streamlined regulations, and established a suite of incentives to support corporate growth and expansion. The Arizona Competitiveness Package, groundbreaking legislation adopted in 2011, makes it easier for existing Arizona companies to prosper and establishes Arizona as one of the most desirable places for expanding companies to do business. Give your company a competitive edge by utilizing Arizona's incentives.

- Job Training
- Quality Jobs
- Qualified Facility
- Computer Data Center Program
- Research & Development
- Foreign Trade Zone
- Military Reuse Zone
- Angel Investment
- Renewable Energy Tax Incentive
- Healthy Forest
- Sales Tax Exemption for Machinery and Equipment
- Lease Excise
- Additional Depreciation
- Work Opportunity
- Commercial/Industrial Solar

- SBIR/STTR
- Private Activity Bonds
- QECB's

(ACA) PROGRAMS

DATABASE OF STATE INCENTIVES FOR RENEWABLES & EFFICIENCY (DSIRE)

- Arizona Incentives/Policies
- Federal Incentives/Policies
- Solar Policy News

DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The following solicitations are now available:
(Click on title to view solicitation)

- Nuclear Energy University Programs - Fellowship and Scholarship – Response due Nov. 30, 2015
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 Expiration Date: Nov. 30, 2016
- NSF/DOE Partnership on Advanced Frontiers in Renewable Hydrogen Fuel Production Via Solar Water Splitting Technologies 2014-2016 - Close Date: Dec. 11, 2014
- Targeted Algal Biofuels and Bioproducts (TABB) - Dec 15, 2014 Submission Deadline for Concept Papers: 10/30/2014 at 5:00 P.M. Eastern Standard Time Submission Deadline for Full Applications: 12/15/2014 at 5:00 P.M. Eastern Standard Time
- Jobs Plus Pilot Program - This Notice of Funding Availability (NOFA) announces the availability of funding of approximately $24 million for the Jobs Plus Pilot program for Public Housing Agencies (PHAs) to develop locally-based approaches to increase earnings and advance employment outcomes for Public Housing residents. The NOFA will fund initiatives to improve employment and earnings outcomes for Public Housing residents through supports such as work readiness, employer linkages, job placement and financial literacy. Of the $24 million available, $9 million is made available from the ROSS appropriations to support the services element of the Jobs-Plus Pilot program. Funding Opportunity Number: FR-5800-N-24 Deadline Date: December 17, 2014
- Buildings Energy Efficiency Frontier & Innovation Technologies (BENEFIT) - 2015
  Close Date: 01/12/2015 Funding Number: DE-FOA-0001166
  Landscape Design for Sustainable Bioenergy Systems Department of Energy
  Close Date: 01/12/2015
- Solid-State Lighting Advanced Technology Research and Development 2015
  Close Date: 01/15/2015
- Advancing Solutions to Improve the Energy Efficiency of U.S. Commercial Buildings
  Close Date: 01/20/2015
- Wood Innovations Close Date: 1/23/2015
- Sustainable and Holistic Integration of Energy Storage and Solar PV (SHINES)
  Close Date: 3/19/15
- Repowering Assistance Program - Ongoing
- Rural Business Enterprise Grants - Ongoing
- Rural Business Opportunity Grants - Ongoing
- Sustainable Agriculture Research and Education Grants - Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance
- Green Refinance Plus – Ongoing
- National Science Foundation Funding Opportunities